

UNITED STATES PATENT OFFICE.

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MAGNETO DRIVING MECHANISM.

1,144,016.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH A. WILLIAMS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Magneto Driving Mechanism, of which the following is a full, clear, and exact description.

The object of this invention is to provide efficient means by which, when an internal combustion engine is slowly turned over, the magneto associated therewith will be compelled to give a succession of quick forward movements that will result in the production of kick-off sparks in the engine cylinders; but which will become inoperative for this purpose when the engine has fairly started, and has attained a suitable speed, after which the magneto will run regularly in proper synchronism with the engine.

The invention includes a spring which is interposed between the armature shaft and the driving member, means for temporarily preventing the armature shaft from turning while the driving member is being turned and is thereby putting the spring under tension, and means whereby when the driving member has been turned through part of a revolution, it will cause the withdrawal of said holding means, and permit the tensioned spring to turn the armature shaft quickly forward until it catches up with the driving member,—said quick forward movement producing a kick-off spark in an engine cylinder.

The invention in a practically efficient form is shown in the drawing, is hereinafter described, and the novel combinations of parts constituting the invention are set forth in the appended claims.

In the drawing, Figure 1 is an end elevation of the invention when the parts thereof are in the position they occupy when the engine is running. Fig. 2 is a similar view showing the same parts, but in the position they occupy when the engine is being started. Fig. 3 is a central vertical sectional view.

Referring to the parts by letters, A represents the armature shaft of the magneto.

C represents a fixture which is secured to one of the side frame members in which this shaft is journaled.

B represents the driving member which is in the form of a sleeve rotatably mounted on the shaft A, and having the housing *b* which overhangs a sleeve D which is fixed to the shaft A. This sleeve D has a disk *d* which is of larger diameter than the diameter of the housing *b*. A volute spring F is arranged within the housing *b* and is connected at its ends with said housing, and with the sleeve D. The disk *d* also carries a spring pawl E having a V-shaped end which is adapted to fit into a V-shaped notch *b'* on the housing *b*.

The driving member is to be connected by suitable mechanism with the crank shaft of the engine with which the magneto is to be used. The gear H which is fixed to the member B may be a part of the train of gearing which may be employed for this purpose. Under normal working conditions, the rotary motions of the driving member B will be transmitted to the armature shaft A through the spring F,—the spring pawl E serving to definitely fix the relative positions of these parts.

Pivoted to the fixture C is a dog G having at its free end a tooth *g* adapted to engage a shoulder *d'* formed by cutting a notch in the periphery of the disk *d*. This dog has above its pivot an arm *g'* which is adapted to be engaged by one end of the latch lever J whereby the dog is held out of operative position as shown in Fig. 1. The dog G has also an arm *g''* which when the tooth *g* is engaging with the shoulder *d'* will lie in the path of a knockout arm K which is fixed to the housing *b*. In order to use this mechanism to produce the kick off sparks in the engine cylinder, the operator turns the latch lever J to the position shown in Fig. 2, whereupon the dog will swing downward so that its tooth *g* engages the periphery of the disk D. Then the operator, as he slowly turns over the engine, will turn the housing *b* in the direction indicated by the arrow on Fig. 2, thereby turning also the disk *d* until the shoulder *d'* thereof engages the tooth *g* of